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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/783,505

02/20/2004

David P. Bloomfield

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12/12/2008

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EXAMINER

HANDAL, KAITY V

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

12/12/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/783,505	<b>Applicant(s)</b> BLOOMFIELD ET AL.	
	<b>Examiner</b> KAITY V. HANDAL	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 11/24/2008 has been entered.

### ***Claim Rejections - 35 USC § 103***

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1, 3 and 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandelik et al. (3,771,261) in view of Buswell et al. (5,360,679).

With respect to claims 1 and 8, Mandelik et al. discloses a processor comprising:

a desulphurization unit (6 or 26) for fuel;

a pre-reformer/secondary reformer (44) for converting the reduced sulfur fuel (28, 46) from the desulphurization unit (6 or 26);

a steam reformer (30) (col. 2, lines 26-35) for reforming the mixture (49) from the pre-reformer/secondary reformer (44); and

wherein the steam reformer catalyst bed has an alkaline earth oxide/carbon dioxide fixing material (col. 5, lines 55-60).

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While Mandelik et al. does teach that it is desirable to treat the product (40) from the reformer (30) to remove water (col. 8, lines 34-41), Mandelik et al. fails to specifically disclose a condenser in order to do this.

Buswell et al. discloses wherein a condenser (182) can be used to remove water from a reformat before the reformat can be fed to a fuel cell. It would have been obvious to one of ordinary skill in the art at the time of the invention to use the condenser of Buswell et al. as the means by which to remove water desired by Mandelik et al. since it is merely the selection of means to remove water from a reformat known to the art and one would have a reasonable expectation of success in using such a water removal device.

Regarding limitations recited in claim 1 which are directed to a manner of operating disclosed device, neither the manner of operating a disclosed device nor material or article worked upon (diesel) further limit an apparatus claim. Said limitations do not differentiate apparatus claims from prior art. See MPEP § 2114 and 2115. Further, process limitations do not have patentable weight in an apparatus claim. See *Ex parte Thibault*, 164 USPQ 666, 667 (Bd. App. 1969) that states "Expressions relating the apparatus to contents thereof and to an intended operation are of no significance in determining patentability of the apparatus claim." . Even so, the primary reference of Mandelik states in (col. 4, line 64 col. 2, line 2) that suitable feeds include those hydrocarbons having an average range of 3 to 15 carbon atoms which are gaseous or liquid at ordinary temperatures. It is known that diesel fuels have 10, 12 or 15 carbon atoms, therefore, Mandelik teaches the intended use as claimed.

A claim containing a “recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus” if the prior art apparatus shows all of the structural limitations of the claim. *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987) Furthermore, “expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus claim.” *Ex parte Thibault*, 164 USPQ 666,667 (Bd. App. 1969). Thus, the “inclusion of material or article worked upon does not impart patentability to the claims.” *In re Young*, 75 F.2d 966, 25 USPQ 69 (CCPA 1935) (as restated in *In re Otto*, 312 F.2d 937, 136 (USPQ 458, 459 (CCPA 1963)).

With respect to claim 1, claim describes operational conditions and do not limit the invented apparatus. While features of an apparatus may be recited either structurally or functionally, claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQZd 1429, 1431-32 (Fed. Cir. 1997)., see also *In re Swinehad*, 439 F.2d 210, 212-13, 169 USPQ 226, 228-29 (CCPA 1971);< *In re Danly*, 263 F.2d 844, 847, 120 USPQ 528, 531 (CCPA 1959). "Apparatus claims cover what a device is, not what a device does." *Hewlett-packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). MPEP 2114.

With respect to claim 3, Mandelik et al. further disclose a furnace (22) capable of vaporizing (col. 7, lines 46-56).

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With respect to claim 5, Mandelik et al. further disclose wherein the product mixture (40) from the reformer (30) can be further treated to remove water and oxides of carbon (col. 8, lines 34-41).

With respect to claims 6, 7 and 9, Mandelik et al. further disclose wherein the catalyst for both the reformer (30) and pre-reformer/secondary reformer (44) can comprise a precious metal catalyst (which would also be capable of acting as a water gas shift catalyst as well as convert hydrocarbon fuel to a mixture of C1 and C2 hydrocarbons) (col. 5, line 46- col. 6, line 8; col. 9, lines 15-16).

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mandelik et al. (3,771,261) in view of Buswell et al. (5,360,679) and further in view of Sechrist et al. (5,965,473).

With respect to claim 10, Mandelik et al. in view of Buswell et al. discloses all of the claim limitations as set forth above, but the references fail to disclose the processor wherein the reformer (30) comprises at least two catalyst beds and a means for diverting feed streams between the beds.

Sechrist et al. teach where reforming catalysts have a tendency to deactivate and require regeneration (col. 1, lines 19-22) and disclose a solution which comprises providing multiple reforming catalyst beds and means by which to divert feed between the various beds (col. 17, line 47-66) to allow for regeneration of the beds. It would have been obvious to one of ordinary skill in the art at the time of the invention to apply the teachings of Sechrist et al. in the device of Mandelik et al. in order to have

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continuous operation of the system by diverting feed from a bed which needs to be regenerated.

### ***Response to Arguments***

Applicant's arguments filed 11/24/2008 have been fully considered but they are not persuasive.

Applicant argues that:

“...Neither Mandelik nor Buswell disclose pre-reforming the diesel (or another hydrocarbon fuel) with steam and then feeding the pre-reformed diesel to a steam reformed coupled with a carbon dioxide absorbing chemical.”

Examiner respectfully disagrees. Mandelik et al. does teach an apparatus comprising a desulphurization unit (6 or 26) for fuel; a pre-reformer/secondary reformer (44) for converting the reduced sulfur fuel (28, 46) from the desulphurization unit (6 or 26); and a steam reformer (30) (col. 2, lines 26-35) for reforming the mixture (49) from the pre-reformer/secondary reformer (44); and wherein the steam reformer catalyst bed has an alkaline earth oxide/carbon dioxide fixing material (col. 5, lines 55-60).

Furthermore, the claims use “comprising” which is open transitional language and does not exclude a reference from having more elements than those recited in the instant claims. MPEP 2111.03 [R-3]. The rejected claims do not exclude systems wherein hydrogen is converted in any in the hydrogen delivery system before being channeled to at least one of a power generation system of hydrogen

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storage system, as the claimed transitional term “comprising” permits the inclusion of other steps, elements, or materials, including both, those disclosed but not claimed by applicant and those neither disclosed nor contemplated by applicant. See *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 802 (CCPA 1981).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KAITY V. HANDAL whose telephone number is (571)272-8520. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on (571) 272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



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/K. V. H./

11/29/08

Examiner, Art Unit 1795

/Alexa D. Neckel/

Supervisory Patent Examiner, Art Unit 1795